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HOFFMANN · EITLE

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H · E File: 84 344 / Smith

Translation of

German Utility Model DE 81 37 577 U1

Roll Number: G 81 37 577.8

(51) Main Class: B41J 11/58

(22) Filing Date: December 23, 1981

(47) Date of Registration: March 25, 1982

(43) Notification in the Patent Bulletin: May 6, 1982

(54) Indication of Subject-matter: Piling Pallet with Stack of Continuous Paper

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Piling Pallet with Stack of Continuous Paper

The novelty relates to a piling pallet with at least one stack of continuous paper arranged on a pallet deck for use mainly in printers, especially in high-performance host computer printers or the like, in which stack individual sheets, connected by perforation or the like and separable, are placed in a zigzag manner adjacent one another.

For high-performance host computer printers or the like, boxed stacks of printer paper are placed in front of the printer or in a feeder chute and subsequently threaded into the actual printer unit. In this arrangement, the stacks are placed in the boxes such that each sheet to be printed is delimited by perforations and thereby separably connected to the next, the individual sheets lying in a zig-zag fashion one over the next, by each sheet being folded about each perforation. Since these computer paper stacks need to be transported manually and more particularly manually relocated from a pallet to the printer, the stacks must have only a certain weight and thus a certain number of sheets. However, ever more printers with a high printing speed and thus a high paper feed capacity, so-called high-performance printers, are being used, such as especially laser printers. The capacity of such high-speed printers can no longer be fully used with conventional paper stacks, since in such fast printers in a short time a new stack is needed and to be threaded into the printer unit, resulting in large downtime of the laser and thus preventing full use being made of the high printing speed of the laser and its capacity. To solve this problem an attempt was made to use reels of paper instead of fanfold paper. These, however, are very heavy and voluminous and thus generally necessitate completely different storage and transport conditions. It is an additional disadvantage that the form sheets can no longer be stacked due to lack of the fanfold perforation, but need to be singled by means of tear and cutter means. In addition, the tendency of the paper to curl up, possibly resulting from the web being reeled, may also lead to difficulties. Apart from this, due to reeling the inking is closed off relatively air-tight, resulting in satisfactory drying throughout no longer being assured. This may, during the curing carried out at high temperatures with laser printers, result in vaporization of the ink components and thus in undesirable soilage of the curing station. Finally, significant technical and monetary efforts are required for suspending and moving the reels in front of the high-performance printer as well as for the necessary cut and tear means.

The novelty is thus based on the problem of achieving a higher throughput and better utilization of high speed printers whilst retaining the advantages of paper stacks that are perforated and laid in a zigzag fashion.

In accordance with the novelty the cited problem is solved by a piling pallet with at least one stack of continuous paper arranged on a pallet deck for use mainly in printers, especially in high-performance host computer printers or the like, in which at least one stack individual sheets, connected by perforation or the like and separable, are placed in a zigzag manner on top of one another, which pallet is characterized in that several individual sheets abutting and connected to each other by perforation lines or the like are aligned in the same stack plane and a fanfold reversing of the direction of the paper run is only provided thereafter.

In the context of the novelty, piling pallet is understood to be the transport or shipping and sales unit consisting of a pallet deck and a stack of paper arranged thereon. In so far as individual sheets abutting and connected to each other by perforation lines are discussed, this must not necessarily be understood as single plies; rather, in accordance with the novelty sets of form sheets may just as well be stacked from several single plies, so that the novelty is particularly further embodied by each individual sheet consisting of several single plies of one form sheet. To make extensive use of the length of a conventional standardized pallet deck, it is provided for in accordance with one aspect of the novelty that two or more, in particular three, individual sheets for host computers are arranged aligned in sequence in a single plane before a fold is made. To optimally utilize the width it is further provided for that several paper stacks are arranged next to one another on a pallet deck and in particular two stacks of sheets for host computers are arranged next to one another on a pallet deck. Although the paper stack is reliably held on the pallet deck just by the weight, for further securing, the paper stack side supports may be provided on the pallet deck. The unit of a piling pallet in accordance with the novelty can advantageously be packaged in a manner known per se, by way of carton containers or plastic shrink film, with the addition of lashing and packaging straps, where necessary.

Whilst paper stacks known hitherto could only exhibit a low weight and thus a low height, since they needed to be transported manually, the piling pallet in accordance with the novelty is transported as a complete unit up to the printer by means of a fork-lift, for example. The piling pallet in accordance with the novelty thus enables to avoid a high packaging expense as necessary with previous paper stacks due to

the need for several packaging boxes. But, the essential advantage of the piling pallet in accordance with the novelty is that the capacity of printers receiving the printing paper from the piling pallet in accordance with the novelty can now be fully utilized. The arrangement of several stacks next to one another on a piling pallet particularly contributes to this, the end of the stack first processed before fully fed into the printer being glued to the start of the next stack so that no additional complicated feeding procedures are necessary. Since the piling pallet in accordance with the novelty cannot be inserted into the paper chute of a computer printer, a simple feeder means is needed by means of freely rotating guide rolls necessitating no additional complication whatsoever. The paper fed from the piling pallet in accordance with the novelty, where it is arranged in several individual sheets connected in sequence and aligned by separable perforations before a change of direction in zigzag shape takes place, is, after printing and upon leaving the printer, inevitably fanfolded in a known manner into a zigzag stack, by way of the perforations separating all of the individual sheets, such that a change of direction takes place after each individual sheet, and that the printed sheets can be simply parted and suitably filed by conventional ways and means. The same capacity as with reels is obtained, thus providing the benefit of a better application, a saving of work, less downtime of the printers and thereby a higher throughput capacity, without any appreciable additional efforts technically and costwise.

Further advantages and features of the novelty follow from the claims and the following description where an example embodiment is described in detail with reference to the drawing, in which:

Fig. 1 shows a piling pallet with a stack of continuous paper on a pallet deck;

Fig. 2 shows in a schematic side view an arrangement for the application of the piling pallet in accordance with the novelty with a printer; and

Fig. 3 in a schematic plan view the arrangement of Fig. 2.

The piling pallet 1 in accordance with the novelty consists of a conventional, standardized pallet deck 2 with feet 3. The pallet deck 2 with the goods thereon can in a conventional manner be received, transported, and by suitable ways and means stored, by a fork-lift. With the piling pallet 1 in accordance with the novelty, two stacks 5 of continuous paper are stacked next to one another (cf. Fig. 3) on the pallet deck 2. The continuous paper thus consists of individual sheets 6 separably

connected to each other by perforations 7. Individual sheet does not necessarily mean a single sheet of paper. Individual sheets 6 are also understood to be individual sheets consisting of several individual plies of a set of copy items. With the piling pallet 1 in accordance with the novelty the paper is now located on the pallet deck 2 such that three individual sheets 6 in each case are sequentially located aligned in a single plane and thus two perforations 7 are non-folded, a perforation only after the third individual sheet being folded such that the running direction of the paper web A, A' is changed. To prevent the stack 5 from slipping out of place side supports 8 in the form of small studs are provided on the pallet deck 2 in a manner corresponding to the dimensions of the three individual sheets 6 arranged in sequence and, where necessary, taking into account that two such stacks 5 are arranged on a pallet one next to the other.

For the application of the piling pallet in accordance with the novelty there is arranged in front of the paper infeed 11 of a printer 12, for example a laser printer for a large-capacity host computer, a feeder means comprising a mast 13 with a cantilever arm 14. Mounted on the cantilever arm 14 is a receiving roll 15 via which the paper taken from the stack 5 is guided. The paper web 5' is then downswept about a guide roll 16 and fed in the direction of the printer 12 by a further guide roll 17. In this arrangement the guide roll 17 may be arranged in the floor of the respective room so that the paper web 5 is transported over a far region of the floor and thus the piling pallet 1 can be located relatively far from the printer 12. By way of a last feeder roll 18 the paper web 5' is introduced into the printer 12 and can be further guided therefrom to the actual printer means. In so far as the paper is not introduced in the way as shown in Fig. 2 vertically from below or, however, also vertically from the rear, but from the side, rolls may be arranged accordingly at an angle of 45° to correspondingly guide the paper.

So as to be able to process both stacks 5 on a pallet deck 2 in a simple and convenient manner, firstly, obliquely arranged rolls are also provided in the region of receiving roll 15 above the stack indicated in Fig. 3 with 5'', the obliquely arranged rolls transferring the paper web of stack 5'' into the plane of stack 5, so that the end of the one stack 5 can be glued to the start of the other stack 5'' and the supply process is not substantially interrupted.

The piling pallet in accordance with the novelty, which due to the stack arrangement may include a very high stack, is supplied as a unit and driven in front of the paper feeder means 10. Thereafter the paper web of the first stack is introduced over the

rolls to the printer 12. The printing process can then take place without interruption over a long period, without having to place a new stack of paper every time in the paper feed chute 11 and thread the paper into the printer every time, which hitherto constituted considerable time expense and greatly diminished the printer capacity of a high speed printer such as a laser printer. When the first stack 5 is pulled off the pallet deck 2, the beginning of the next stack is merely to be glued to the end of the first stack, which may take place relatively quickly. The printer may then instantly continue to print. In addition to the advantage of a large store of paper on a piling pallet as a sales unit, the piling pallet in accordance with the novelty as a supply unit as compared to supply units of printing paper known hitherto for large host computers and their application now provides the advantage that the printer speed and capacity of such a printer can be substantially better utilized and is not interrupted by downtime for having to refill individual stacks of paper. In addition, there is now no need for individual boxes for the stacks of printing paper and their packaging in these boxes. In the piling pallet 1 in accordance with the novelty, the stacks 5 can be protected and held in place on the pallet deck 2 by film and holding straps as packaging.

The features of the novelty disclosed in the above description, in the drawing as well as in the claims may be essential both individually and in any combination for realizing the novelty in its various embodiments.

Claims

1. Piling pallet with at least one stack of continuous paper arranged on a pallet deck for use mainly in printers, especially in high-performance host computer printers or the like, in which at least one stack individual sheets, connected by perforation or the like and separable, are placed in a zigzag manner on top of one another, characterized in that several individual sheets (6) abutting and connected to each other by perforation lines (7) or the like are aligned in the same stack plane and a (fan)fold (7') reversing of the direction of the paper run (A, A') is only provided thereafter.
2. Piling pallet as set forth in claim 1, characterized in that three individual sheets (6) for printers are sequentially arranged aligned in a single plane before a fold (7') is made.
3. Piling pallet as set forth in claim 1 or 2, characterized in that each single web (6) consists of several individual formats of a form sheet.
4. Piling pallet as set forth in any of the preceding claims, characterized in that several paper stacks (5) are arranged next to one another on a pallet deck (2).
5. Piling pallet as set forth in claim 4, characterized in that two stacks (5) of sheets for printers are arranged next to one another on a pallet deck (2).
6. Piling pallet as set forth in any of the preceding claims, characterized in that side supports (8) for the paper stack (5) are provided on the pallet deck (2).

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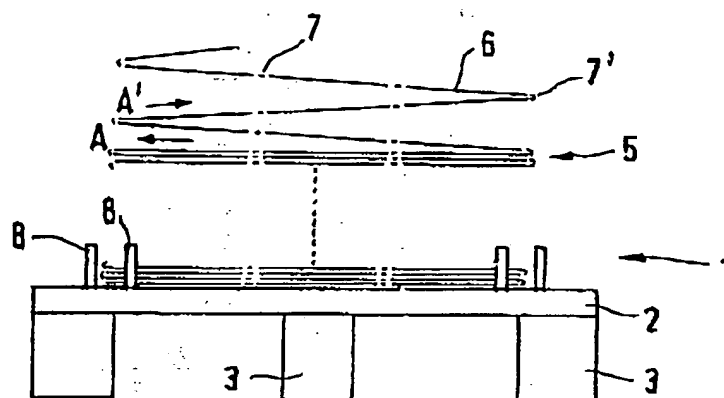


FIG. 1

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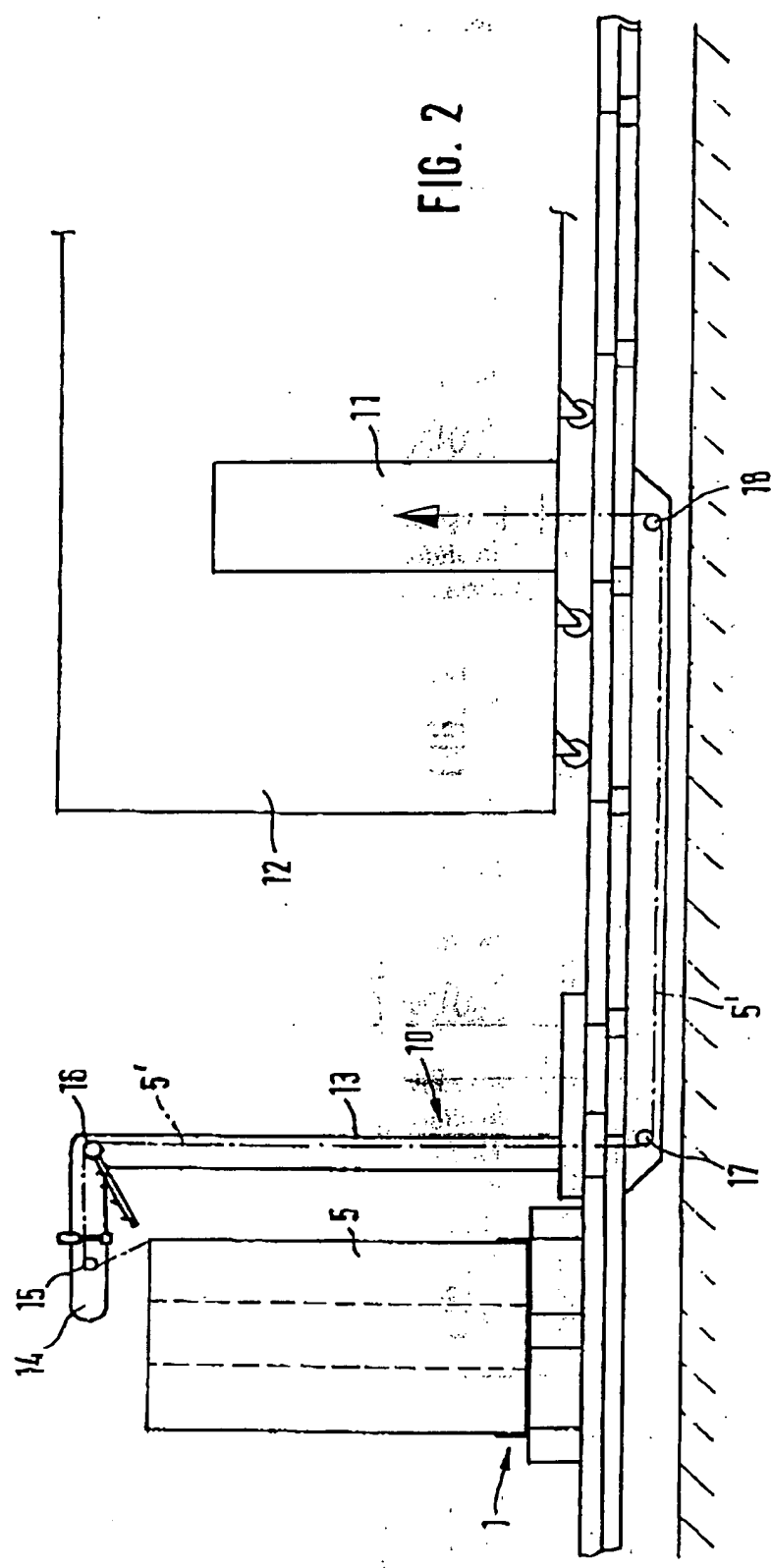


FIG. 2

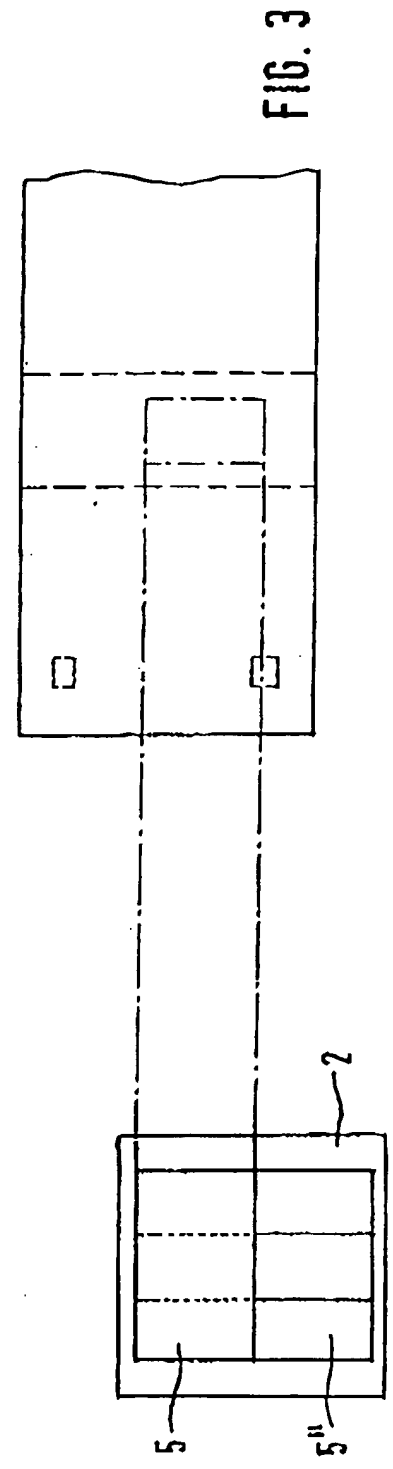


FIG. 3